Project Risk Management

Sharif Project Management

Session 10.2
Preparing for Possibilities

"Look before you leap"
Figure 18.3a: Risk vs Amount at Stake
Figure 18.4: Risk Responsibility Organisation Structure
Risk Management

The systematic processes of identifying, analyzing & responding to project risks

A formal approach to the process as opposed to an intuitive one.

1. Define objectives
2. Identify Risk
3. Quantify Risk
4. Develop Response
5. Risk Control
1- Define Objectives

Divide and then define

- Subdivide by stakeholders
- Subdivide by PM knowledge area
- Subdivide by OBS (departments)
- Subdivide by WBS (work package)
- Subdivide by constraints
## Define Objectives, Sub-divide Objectives

<table>
<thead>
<tr>
<th>Project Management Knowledge Areas</th>
<th>Objectives</th>
</tr>
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<tbody>
<tr>
<td>Scope Management</td>
<td>WBS, Drawing List</td>
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<tr>
<td>Time Management</td>
<td>CPM, Schedule Barchart</td>
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<tr>
<td>Cost Management</td>
<td>Budget, Cash-Flow Statement</td>
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<tr>
<td>Quality Management</td>
<td>Project Quality Plan, Quality Control Plan</td>
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<td>Integration Management</td>
<td>Planning and Control</td>
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<tr>
<td>Human Resource Management</td>
<td>OBS, Resource Histogram</td>
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<tr>
<td>Communication Management</td>
<td>Communication Plan</td>
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<tr>
<td>Risk Management</td>
<td>Risk Management Plan</td>
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<tr>
<td>Procurement Management</td>
<td>Procurement Schedule</td>
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Table 18.1: Objectives Sub-Divided by Knowledge Area
Figure 18.5: Risk Management Integrated
(with the other PMBOK knowledge areas)
2- Risk Identification

Start with each objective
  • Cause to effect
  • Effect caused by

<table>
<thead>
<tr>
<th>WBS</th>
<th>Objectives</th>
<th>Cause</th>
<th>Effect</th>
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Table 18.4: Cause and Effect (proforma)
Risk Identification

- Historical data/closeout reports
- Structured questionnaires
- Structured interviews
- Brainstorming
- Structured checklist (WBS)
- Flow charts (build methods)
- Judgment based on experience
- System Analysis
- Scenario Analysis
Why Projects Fail

- Innovation
- Concurrency
- Stakeholders
- Communication
- Scope of work
- Poor estimating
- Poor planning
- Insufficient reviews
- Insufficient control
- Lack of commitment
- Incomplete and/or inaccurate information
- Lack of support from team members
- . . . .
3- Risk Qualification

- For each risk, identify the risk degree, qualify by experts, and quantify!
  - Subjective
  - Objective

- Probability
- Expected Value
- Variance
Figure 18.6: Probability / Impact Matrix
**Consequence, Priority**

<table>
<thead>
<tr>
<th>WBS</th>
<th>Objective</th>
<th>Risk</th>
<th>Probability</th>
<th>Consequence</th>
<th>Priority</th>
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Table 18.5: Objective, Risk, Probability, Consequence and Priority (proforma)
5- Risk Response

• Eliminate Risk
  Remove early

• Mitigate Risk
  Reduce probability/impact

• Deflect Risk
  Transfer to another party

• Accept Risk
Figure 18.7: Cost Benefit of Reducing Risk
Contracting

- Fixed price contract
- Cost plus contract
- Unit rates contract
- Turnkey contract
- BOOT contract
## Risk Management Plan

<table>
<thead>
<tr>
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*Table 18.6: Objective, Risk, Response, Mitigating Risk (proforma)*
6- Risk Control

- Implements Risk Management plan to make it happen. Most neglected, but most important.
- Includes communication, training, practice runs. Develop company culture & attitude.
- Risk Management plan is monitored/updated on a regular basis to include any changes:
  - Changes in the scope of work
  - Changes in the build method
  - Changes in the team members
  - Changes in the suppliers
"You Never Know . . . ."

"That was a lucky escape!"